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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,540	10/31/2003	William Preston Keith	60113.0002US01	9961

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EXAMINER

AFTERGUT, JEFF H

ART UNIT

PAPER NUMBER

1733

DATE MAILED: 07/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/698,540

Applicant(s)

KEITH ET AL.

Examiner

Jeff H. Aftergut

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 8-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☒ Claim(s) 5-7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-7, drawn to a method for fabricating a laminate composite wherein one inserted z-pin reinforcement into the same, classified in class 156, subclass 92.
  - II. Claims 8-15, drawn to a method of making a composite laminate including a solid composite which is transitioned to a composite sandwich structure, classified in class 156, subclass 293.
  - III. Claim 16-20, drawn to a laminate composite structure, classified in class 428, subclass 116.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination of Group I has separate utility such as a method for forming joint structure in a T shaped configuration for a solid composite structure wherein no core assembly was provided for and the composite pins were inserted into the composite material at the bend region therein. See MPEP § 806.05(d).
3. Inventions I and III are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2)

Art Unit: 1733

that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the process as claimed can be used to form a joint structure of a composite solid "T" shaped assembly without the need for the sandwich component.

4. Inventions II and III are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed could be made by a materially different process such as one which started with the composite core assembly and then formed the wedge shaped component on the end of the same followed by placement of the exterior facing plies over the assembly wherein one did not insert the wedge shaped component into the solid composite prior to placement of the core within the facing sheets.

5. Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

6. Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

7. During a telephone conversation with Robert Slenker on 6-23-06 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-7.

Art Unit: 1733

Affirmation of this election must be made by applicant in replying to this Office action.

Claims 8-20 have been withdrawn from further consideration by the examiner, 37

CFR 1.142(b), as being drawn to a non-elected invention.

8. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Campbell et al.

Campbell et al suggested that it was known at the time the invention was made to insert a plurality of pins in a plurality of plies of stacked composite material in the region of a bend in the plies of composite material prior to curing the solid laminate. With respect to claim 2, note that as depicted the pins are inserted normal to the surface of the composite material at the bend as depicted. Regarding claim 3, note that pins are disposed in both the web portion 14 and the flange portion 16 of the composite member.

The applicant is more specifically referred to column 3, line 52-column column 5, line 45 and Figures 1-2 for example.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Campbell et al in view of David.

The applicant is referred to paragraph 10 above for a complete discussion of Campbell et al. the reference clearly added the pins into the solid composite member in the region where there was a bend as described. The reference additionally suggested that the material was cured subsequent to pin insertion. The reference to Campbell et al failed to make mention of a varying of the density of the pins whereby the density in the concentration of the pins decreased from the center of the bend outward.

David suggested that it was known to incorporate spikes (pins) in a fiber reinforced composite article including a bend therein in order to increase the strength of the bent composite article by provision of reinforcement in the z-direction. The reference inserted the pins into the composite plies laid up in a filament winding operation. the reference suggested that from the center of the bend outward, one would have varied the density of the spikes as needed in order to provide the composite with the requisite strength as discussed at column 5, lines 4-31 and column 6, lines 26-62 for instance. It

Art Unit: 1733

would have been obvious to one of ordinary skill in the art at the time the invention was made to provide greater density of z-direction reinforcement in the bend region of the composite as such was recognized as an area of a composite article which required greater z-direction reinforcement as suggested by David in the process of making a bent composite article from plies which included z-direction reinforcement therein.

***Allowable Subject Matter***

13. Claims 5-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

None of the prior art of record taught or suggested that one skilled in the art would have layered plies of material with interspersed orientation to create a solid laminate, inserted a plurality of pins into the solid, terminated the inner plies of the solid laminate so that the outer plies extend to create top and bottom face sheets, inserted a second plurality of plies of material in the laminate composite where inner plies of the solid laminate terminate and extending the second plurality of plies from the termination of the inner plies for a specified distance but not extending as long as the top face sheet and the bottom face sheet, and inserting a core material into a void of the laminate composite bounded by the termination of the second plurality of plies, the top facing sheet and the bottom facing sheet.

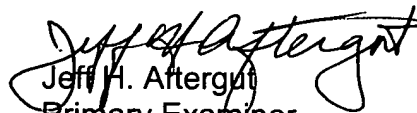
**Conclusion**

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. E.P. '281 suggested a suitable manner for forming a wedge shaped composite component.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff H. Aftergut whose telephone number is 571-272-1212. The examiner can normally be reached on Monday-Friday 7:15-345 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Jeff H. Aftergut  
Primary Examiner  
Art Unit 1733

JHA



Application/Control Number: 10/698,540

Page 8

Art Unit: 1733

June 26, 2006